

# Corrections to lecture notes

Typos in the (printed version of the) lectures notes; fixed in the latest online version. (Some minor typos are not listed here.)

## Formula sheet

- Fixed missing  $\frac{\partial f}{\partial x}$  in Ito's formula.

## Chapter 1

- At the bottom of page 8, the  $T$  should be a 1.
- Equation (2.1) should read  $\mathbb{E}[S_1] = sup_u + sdp_d$ , but the  $s$  is missing.
- In exercise 1.5, it should read

$$\mathbb{P}[X = x] = \begin{cases} \frac{1}{n} & \text{if } x = n^2 \\ 1 - \frac{1}{n} & \text{if } x = 0. \end{cases}$$

but the  $.^2$  is missing.

## Chapter 2

- The final displayed equation at the bottom of page 16 should read

$$X^{-1}[0, 1] = \{HH, HT, TH\} \notin \dots$$

- $Y = \mathbb{1}_A$  in the proof of Lemma 2.4.4.

## Chapter 3

- Fixed  $\mathcal{F}_1$  and  $\mathbb{P}[X_i = 0]$  in the example of conditional expectation on page 29.
- The  $\mathbb{E}[X | \mathcal{G}]$  in the proof of the (measurability): part of Proposition 3.2.1 should be an  $X$ .
- Added missing  $X \in L^1$  condition to Lemma 3.2.4.

## Chapter 4

## Chapter 5

- Fixed second part of Proposition 5.2.6 to read 'time 1' instead of 'time 0'.
- Four lines up from Definition 5.5.4, 'measurable' should read 'adapted'.
- Fixed the proof of Proposition 5.5.7.
- Within the binomial model hedging method:

STEP 3: Fixed  $\Phi(su) = 180$  to  $\Phi(su) = 190$  on the first displayed equation.

STEP 4: Fixed  $\Phi(su) = 120, \Phi(sd) = 40$  just above the first displayed equation to read  $\Phi(su) = 52.5, \Phi(sd) = 2.5$ , and also in the calculation of  $x_1, y_1$ . Fixed  $y_t$  to read  $y_1$ .

## Chapter 6

## Chapter 7

- Fixed missing  $\theta > 0$  condition in proof of Lemma 7.4.2, and fixed equation (7.4).

## Chapter 8

## Chapter 9

## Chapter 10

- Changed ‘previsible’ on page 15 to ‘adapted’.

## Chapter 11

## Chapter 12

## Chapter 13

## Chapter 14

- Fixed several typos in the calculation that gives the Black-Scholes formula.
- Fixed the pricing formula claimed in Q14.4(b)

## Chapter 15

- Fixed missing  $S_t$  in the  $\delta y_t S_t dt$  term in Definition 15.3, and in the verbal discussion of continuously reinvested dividends at the start of the chapter.

## Solutions

Q1.1 Replaced the solution (it answered the wrong question).

Q1.2 Various typos.

Q1.4 It should say that  $\mathbb{E}[X^2] = \frac{2}{\lambda^2}$  and  $\text{Var}(X) = \frac{1}{\lambda^2}$ .

Q1.6 Fixed the  $\sigma^2$ s.

Q5.6 Fixed the numbers in the calculation of the replicating portfolio.